

SEPTEMBER 1976

No. 9



FISHING INFORMATION

Southwest Fisheries Center-La Jolla, California



**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE**

**SOUTHWEST FISHERIES CENTER
8604 LA JOLLA SHORES DRIVE - P. O. BOX 271
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FISHING INFORMATION

SEPTEMBER 1976 , No. 9



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PREFACE

This publication, Fishing Information, appears monthly and contains 1) fishery advisory information, 2) a narrative description of pertinent surface temperature conditions, 3) charts of winds and pressures for the eastern North Pacific, 4) charts of sea surface temperature for the North Pacific and eastern tropical Pacific, and 5) charts of subsurface temperature structure in the eastern North Pacific.

A supplement to Fishing Information appears at 15-day intervals throughout the year. This is a chart of sea surface temperature (contoured at 2°F (1°C) intervals) from Baja California to Vancouver Island out to about 135°W. Special bulletins are published in conjunction with the 15-day sea surface temperature charts which include short-term projections of albacore distribution and locations of productive fishing areas, information on oceanographic and atmospheric conditions, and other information as is appropriate during the albacore fishing season.

The secretary of Commerce has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department.

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ENVIRONMENTAL CHARTS ANALYZED BY:

F. Miller (Figures 8 and 9)
 J. Renner (Figures 1, 2, 3, 4, 5, 6, 7, 10, 11, 12 and
 15 day Supplement)

TECHNICAL EDITOR:
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L. Collins at Kains Island Lightstation; I.G. McNeil at Amphitrite Point Light

Scripps Institution of Oceanography, La Jolla, California

Fishing Vessels, *Aquarius*, *Caribe*, *Carol Virginia*, *Diana C.*, *Frances Ann*, *Gina Karen*, *Maria C.J.*, *Maria Elena*, *Marietta*, *Mary Barbara*, *Mermaid*, *Polaris*, *Raffaello*, *Rosa Olivia*, *Saratoga*, *Santa Elena*, *Santa Rosa*, *Seaquest*, *Venturous*

Expendable bathythermograph and salinity observations are made by the mates and engineers of the *California*, *Hawaiian Enterprise*, and *Hawaiian Queen* of the Matson Navigation Co. The data are processed under supervision of D.R. McLain at the NMFS Pacific Environmental Group, using computer facilities of the Fleet Numerical Weather Central, Monterey. The project is partially supported by the National Science Foundation and the Office of Naval Research.

Sea Surface Temperature and Environmental Conditions

N. CLARK AND F. MILLER

Eastern North Pacific

Sea surface temperature changes between August and September are usually small in the eastern North Pacific as seasonal cooling begins. During September 1976 temperatures decreased by 1 to 3° F (0.6 to 1.7°C) over most of the Gulf of Alaska and along the west coast of North America from eastern Alaska south to the Channel Islands off southern California. Small temperature increases occurred over a large area between Baja California and Hawaii.

The greatest change in the sea surface temperature anomaly pattern occurred in an area southwest of Baja California between 20° N and 30° N where temperatures that were 1 to 3° F (0.6 to 1.7° C) below normal in August increased to 1 to 3° F (0.6 to 1.7° C) above normal values. The large area of 3 to 5° F (1.7 to 2.8° C) below-normal temperatures in the central and northern regions of the eastern North Pacific increased in size and intensity during September and now covers most of the ocean north of 33° N.

Temperatures along the U.S. west coast are 1 to 2° F (0.6 to 1.1° C) below normal except for small areas of slightly above-normal temperatures off northern Oregon, northern California, and around the Channel Islands.

Sea level pressures averaged up to 8 millibars below normal over much of the eastern North Pacific during September, resulting in a fairly strong Aleutian low pressure system and a weakened North Pacific high pressure cell. Strong northwesterly winds on the western side of the Aleutian low caused sea surface temperatures to decrease at above-normal rates over the western Gulf of Alaska.

Western North Pacific

The greatest change in the sea surface temperature anomaly pattern during September 1976 occurred east of Honshu and Hokkaido where temperatures that were 2 to 4° F (1.1 to 2.2° C) below normal, increased to 1 to 2° F (0.6 to 1.1° C) above-normal values. Above-normal warming also occurred between 20° N and 30° N and 125° E and 140° E where slightly above-normal temperatures increased to 1 to 3° F (0.6 to 1.7° C) above-normal values.

The large area of 3 to 5° F (1.7 to 2.8° C) below-normal temperatures in the central western North Pacific decreased in size and intensity during the month.

Eastern Tropical Pacific

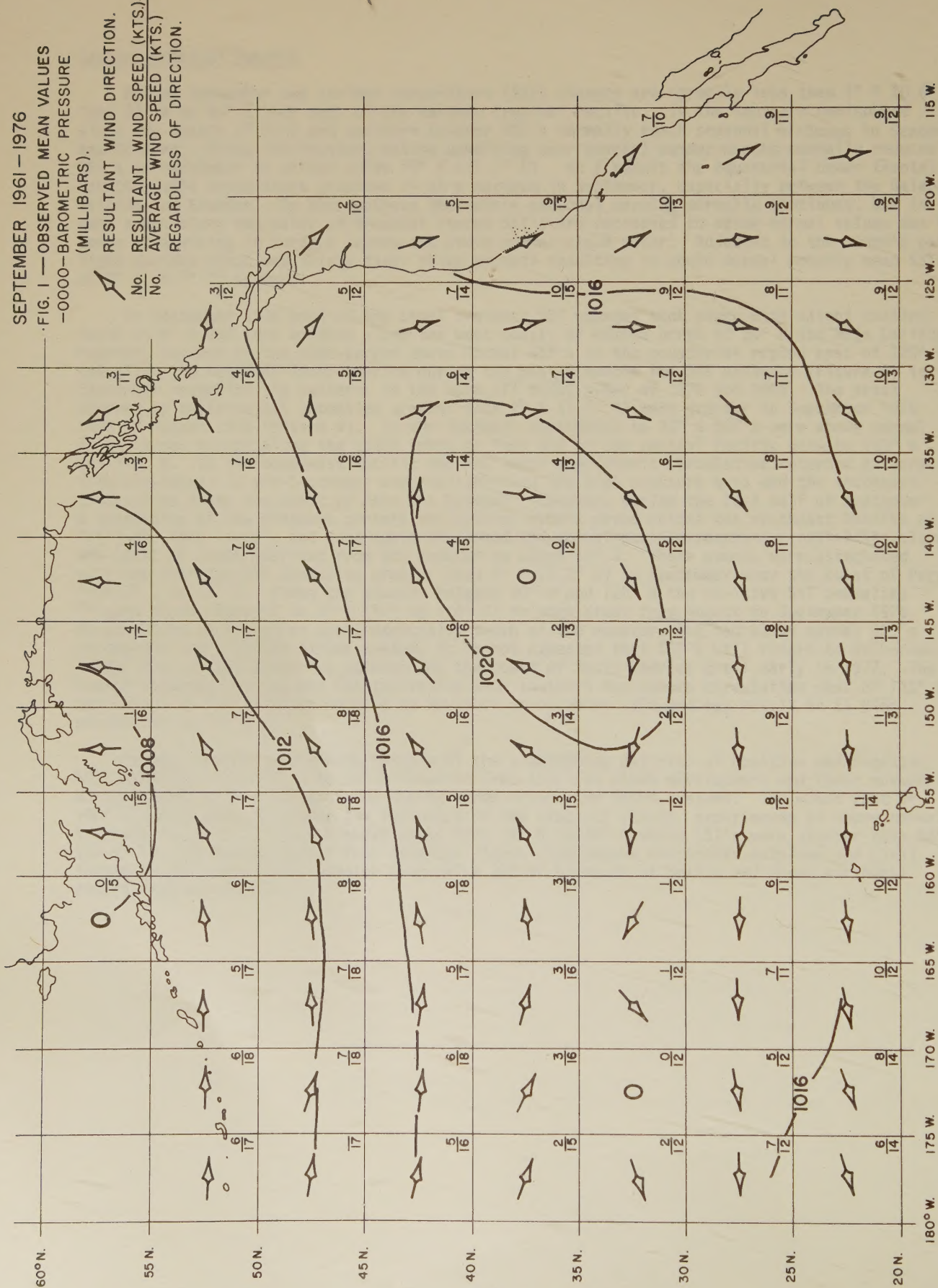
During September sea surface temperature (SST) changes are normally less than 1°F (0.6°C) from 30°N to 30°S over most of the eastern tropical Pacific. In the southern hemisphere along the coasts of Peru and southern Ecuador SST's normally reach seasonal minimums in September and October. Along the equator, active upwelling over several summer months normally reduces SST's in September to values below 70°F (21.1°C). As a result the equatorial ocean fronta] (north-south) temperature gradient is at a maximum in September, especially between the Galápagos Islands and Ecuador. In the northern hemisphere seasonal warming normally continues, but in some areas along the paths of tropical storms SST's are decreased to below normal values due to heavy wind mixing in surface layers and above normal cloud cover. Adjacent to the storm's paths, light surface winds and fairly clear skies prevail resulting in above normal monthly mean SST's of 2°F (1.1°C) or more.

In September 1976 most of the usual seasonal SST changes took place with slight cooling south of 5°N and some warming along the west coasts of Mexico north of 20°N and Baja California. However, because of the wide-spread above normal SST's in the equatorial region east of 120°W and along the coast of South America during the past 4 months the SST patterns (Figure 8) in September resembled the patterns in the warm (El Niño) years of 1972 and 1965. The areas covered by positive SST anomalies greater than 2°F (1.1°C) were greater in September 1976 than in August 1976 (Figure 9). In the southern hemisphere to 30°S SST's were above normal in all areas except along the south coast of Peru and in the central Pacific between 150°W and 170°W . In the southeast Pacific the low level atmospheric circulation returned to normal from mid-August to mid-September and reestablished the high pressure area and the southeast trade winds along the coast of Peru and Ecuador. However, during the last half of September a succession of low pressure centers and weather fronts moved across the southeast Pacific at lower latitudes than normal, and once again disrupted the normal ocean atmosphere circulations along the coast of South American from the equator to about 15°S . These events were associated with the positive SST anomalies greater than 4°F (2.2°C) in September near the coast of Peru from 6°S to 12°S . Along the equator between 90°W and 120°W the positive SST anomalies (Figure 9) decreased 2 to 3°F (1.1 to 1.6°C) in some areas from August to September 1976. Because such an extensive area, especially south of the equator, has had above normal SST's throughout the southern winter season, it is not expected that SST's will return to or become colder than normal along the equator and the coast of South America until early in 1977. The normal seasonal warming and the continuing weak southern hemisphere circulation east of 120°W may result in even greater warming by November or December 1976 and may result in El Niño conditions to 15°S .

In the northern hemisphere (Figure 9) the alternating patterns of positive and negative SST anomalies from 5°N to 25°N resulted from tropical storm development and their movement northwestward with the associated strong winds around the storm systems. The areas east of 140°W , which were not under the influence of the tropical storms, experienced an above normal increase in SST's. Figure 8 shows areas from 10°N to 20°N where SST's were greater than 84°F (28.9°C). During September four tropical storms (two became hurricanes Kathleen and Liza) formed in the warm waters greater than 84°F (28.9°C) south of Mexico and moved northwest toward Baja California.

SEPTEMBER 1961-1976

FIG. 1 - OBSERVED MEAN VALUES
 -0000- BAROMETRIC PRESSURE
 (MILLIBARS).
 RESULTANT WIND DIRECTION.
 RESULTANT WIND SPEED (KTS.)
 AVERAGE WIND SPEED (KTS.)
 REGARDLESS OF DIRECTION.



SEPTEMBER 1976

FIG. 2 — OBSERVED VALUES

—0000—BAROMETRIC PRESSURE

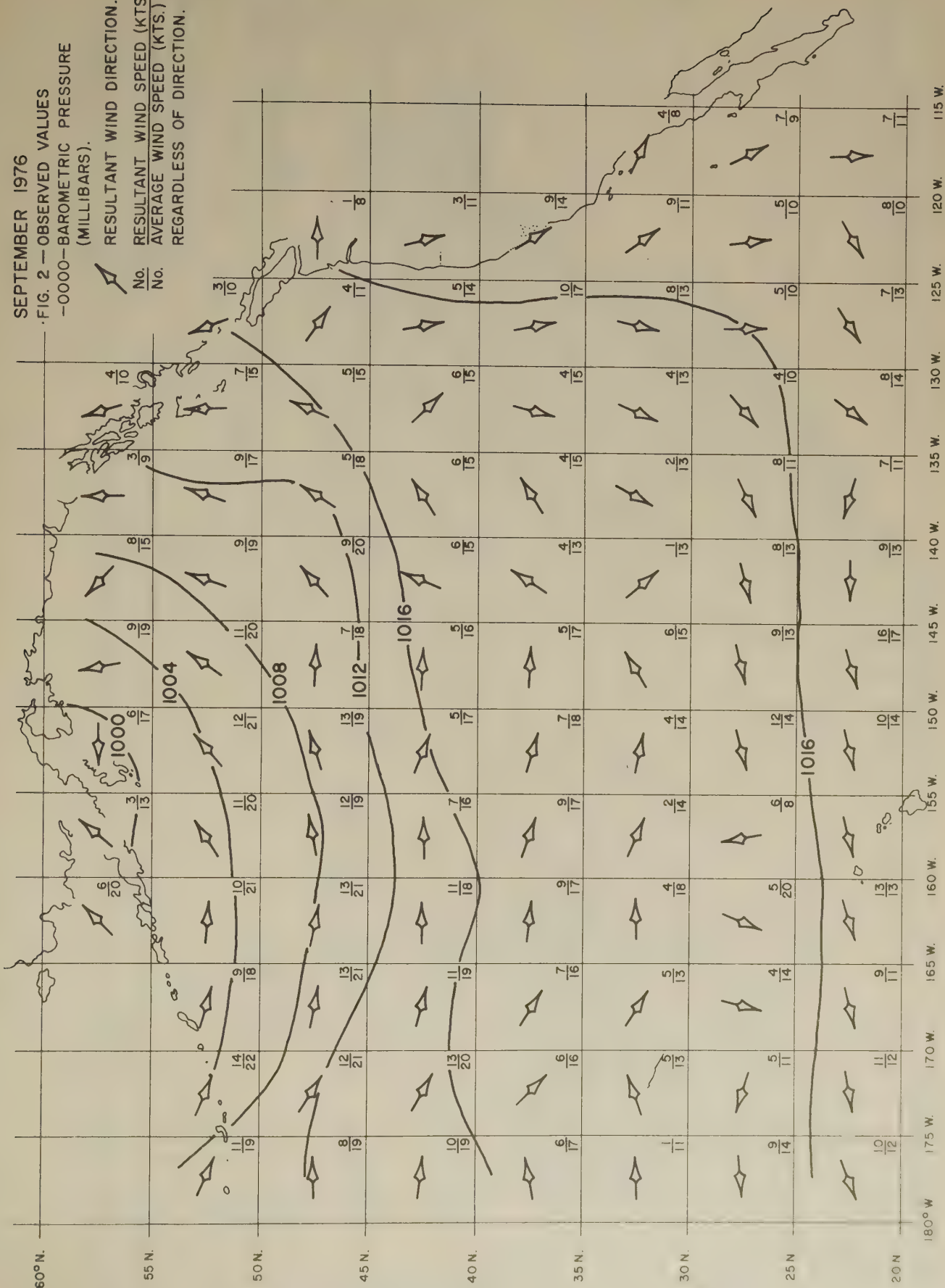
(MILLIBARS).

RESULTANT WIND DIRECTION.

RESULTANT WIND SPEED (KTS.)

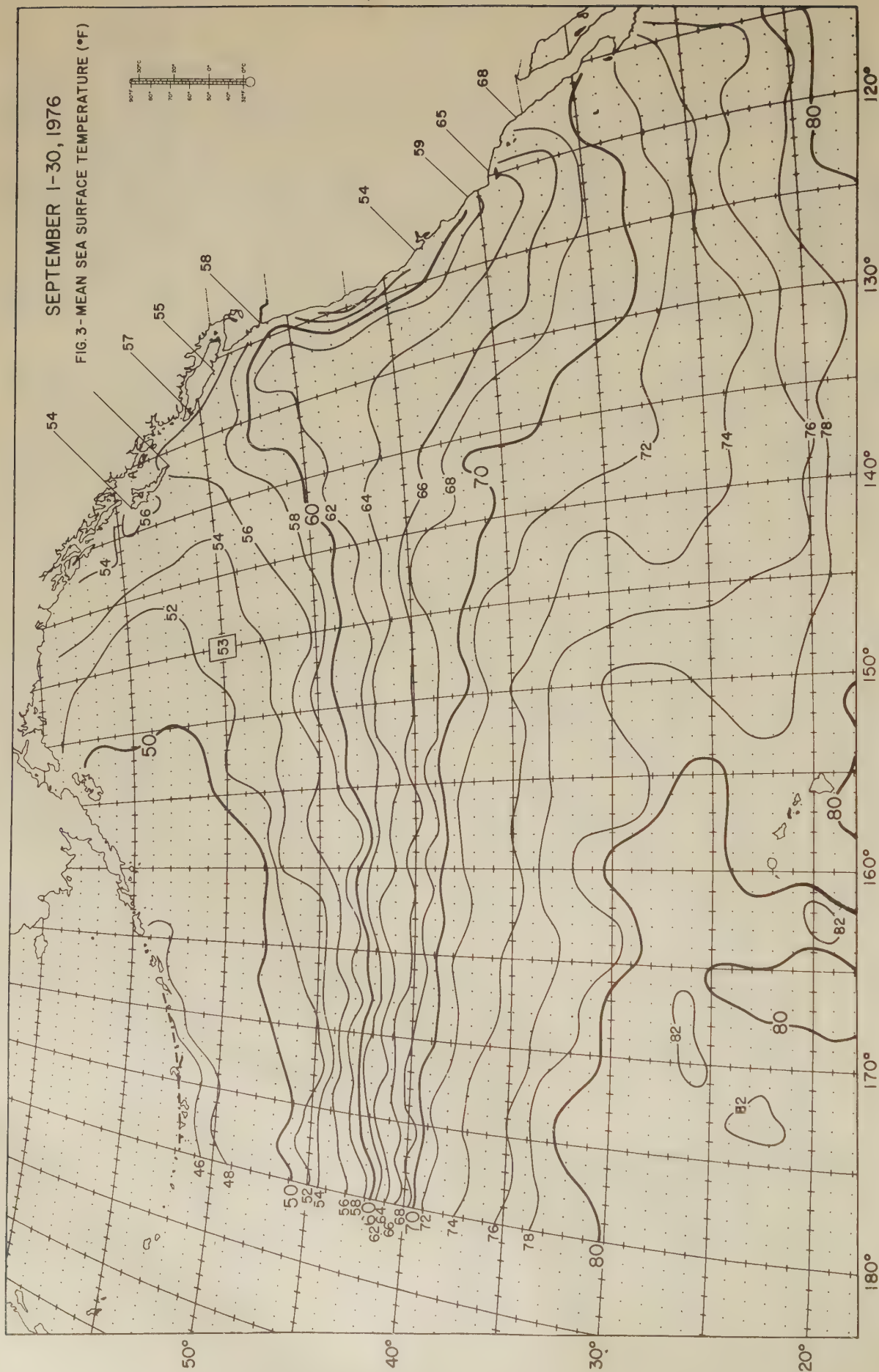
AVERAGE WIND SPEED (KTS.)

REGARDLESS OF DIRECTION.



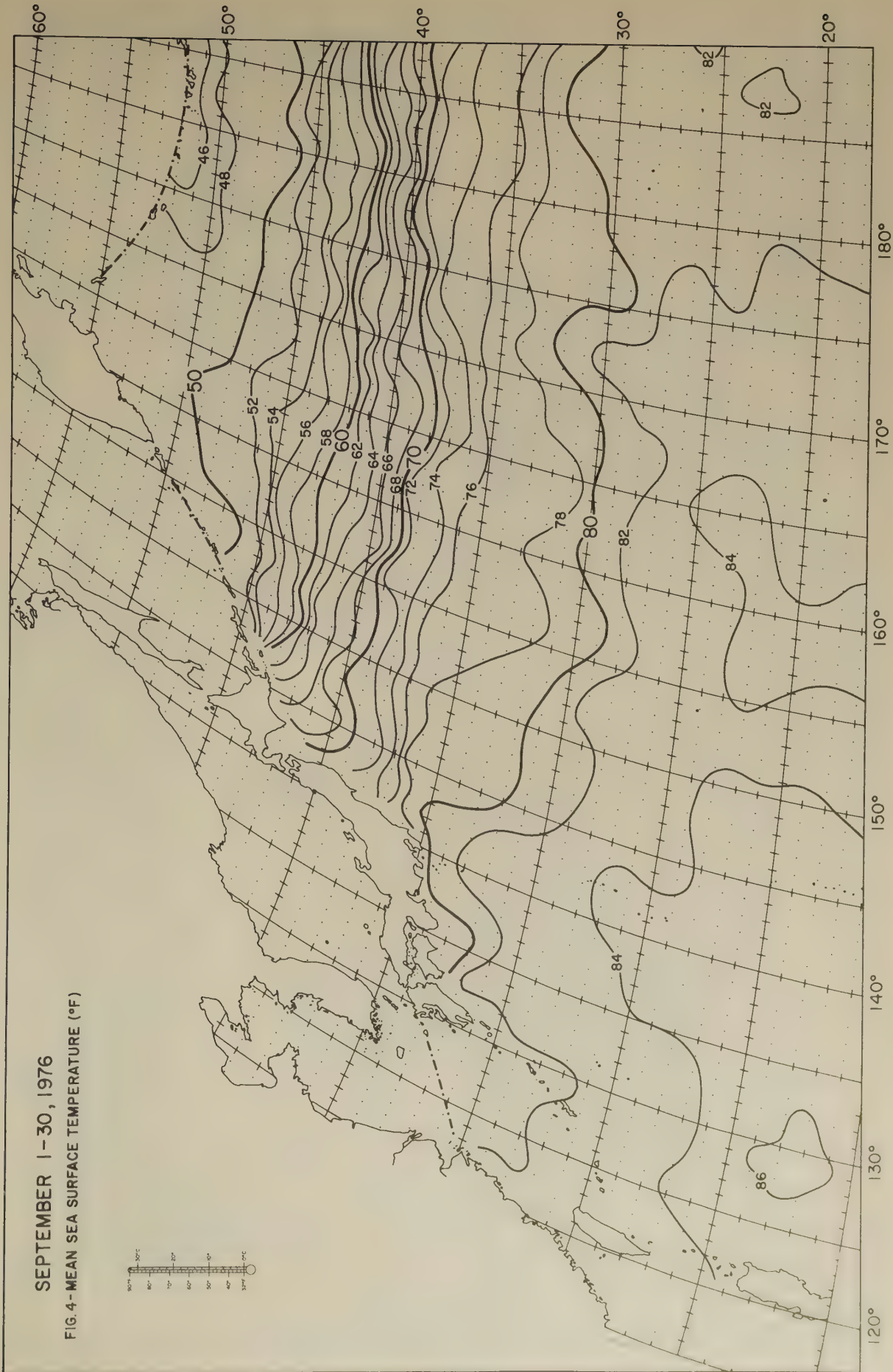
SEPTEMBER 1-30, 1976

FIG. 3-MEAN SEA SURFACE TEMPERATURE (°F)



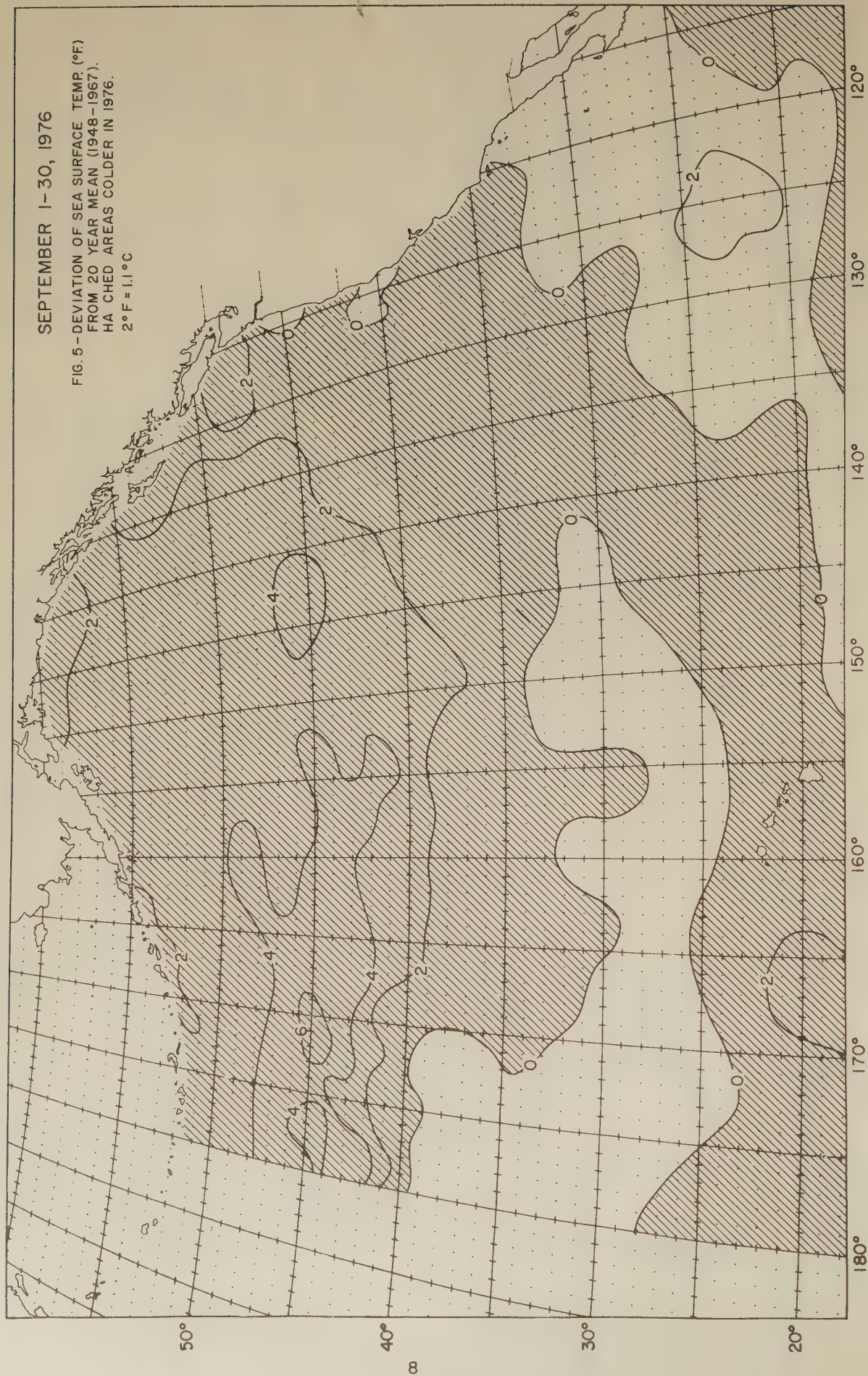
SEPTEMBER 1-30, 1976

FIG. 4-MEAN SEA SURFACE TEMPERATURE (°F)



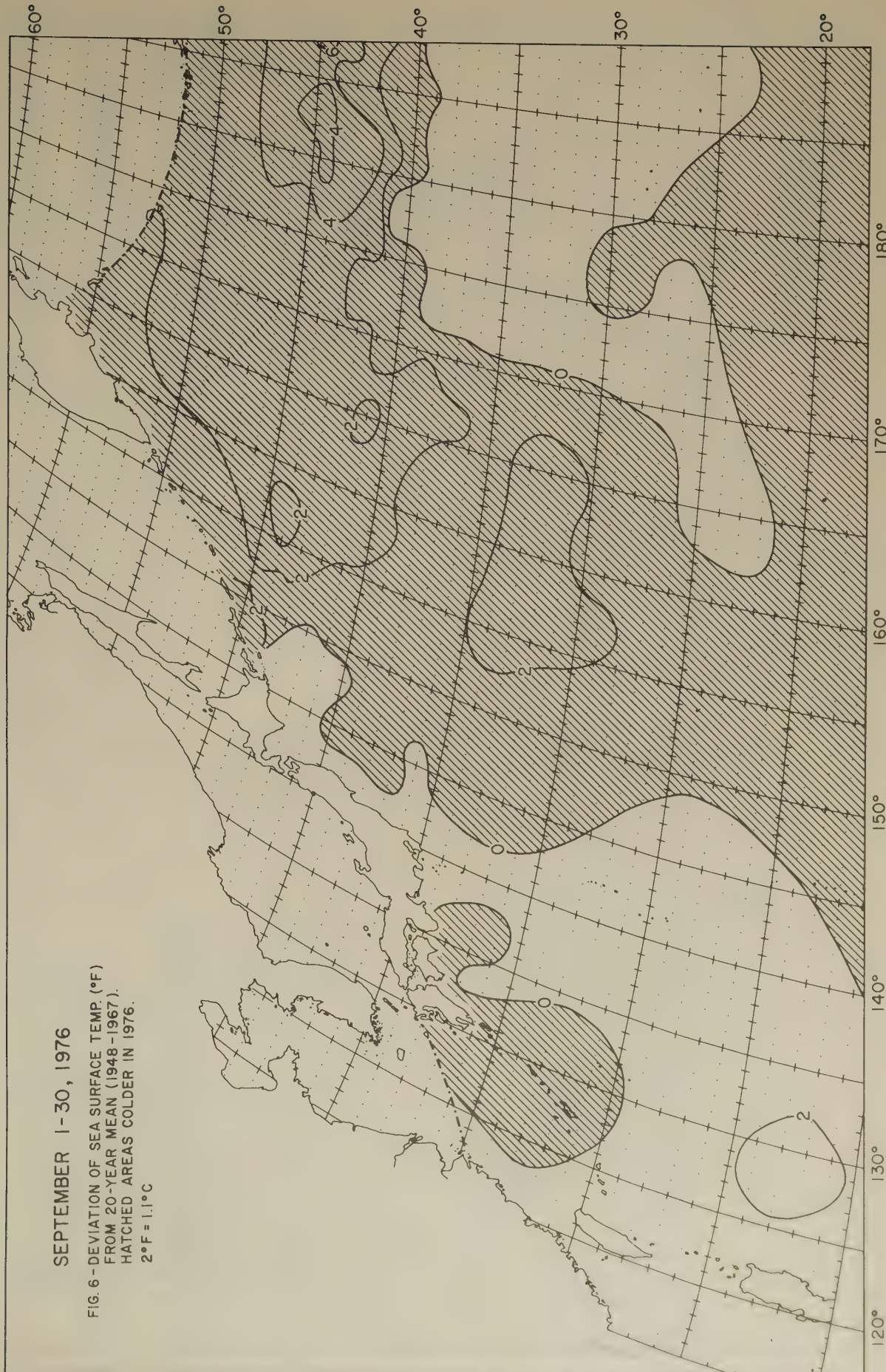
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FIG. 5-DEVIATION OF SEA SURFACE TEMP. (°F)
FROM 20 YEAR MEAN (1948-1967).
Hatched AREAS COLDER IN 1976.
2°F = 1.1°C



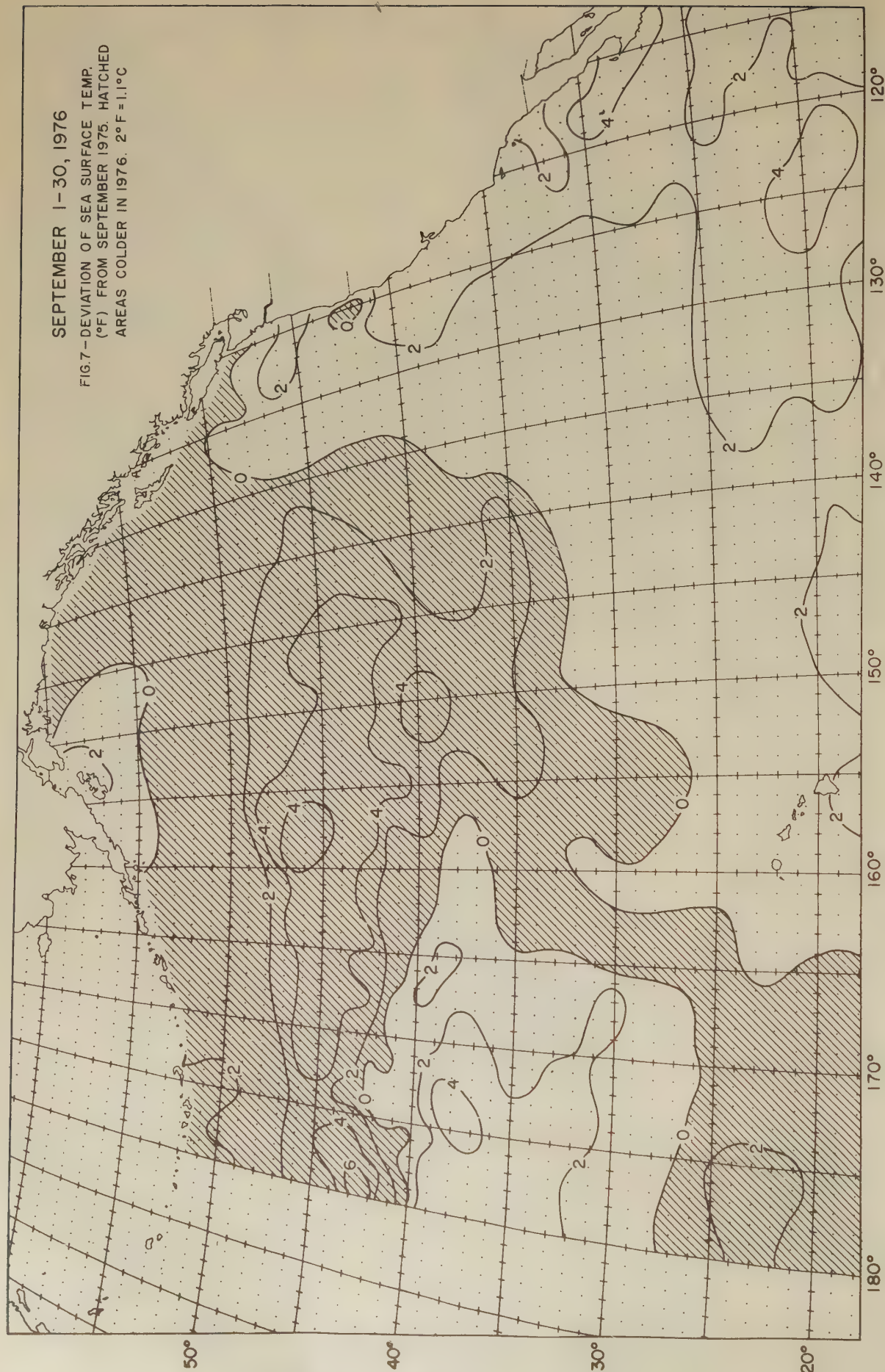
SEPTEMBER 1-30, 1976

FIG. 6 - DEVIATION OF SEA SURFACE TEMP (°F)
FROM 20-YEAR MEAN (1948-1967).
HATCHED AREAS COLDER IN 1976.
2°F = 1.1°C

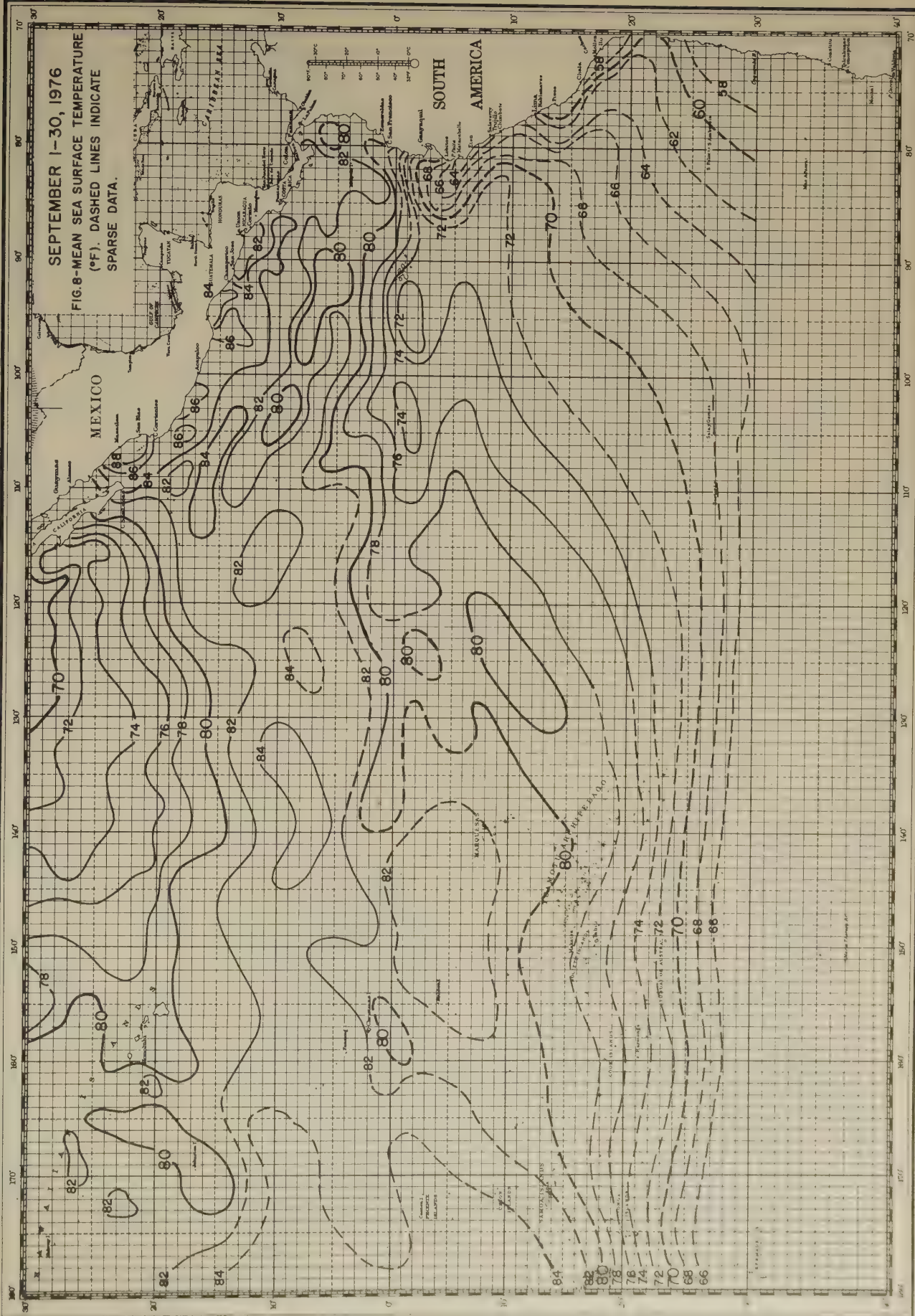


SEPTEMBER 1-30, 1976

FIG. 7-DEVIATION OF SEA SURFACE TEMP.
(°F) FROM SEPTEMBER 1975. HATCHED
AREAS COLDER IN 1976. 2°F = 1.1°C



SEPTEMBER 1-30, 1976



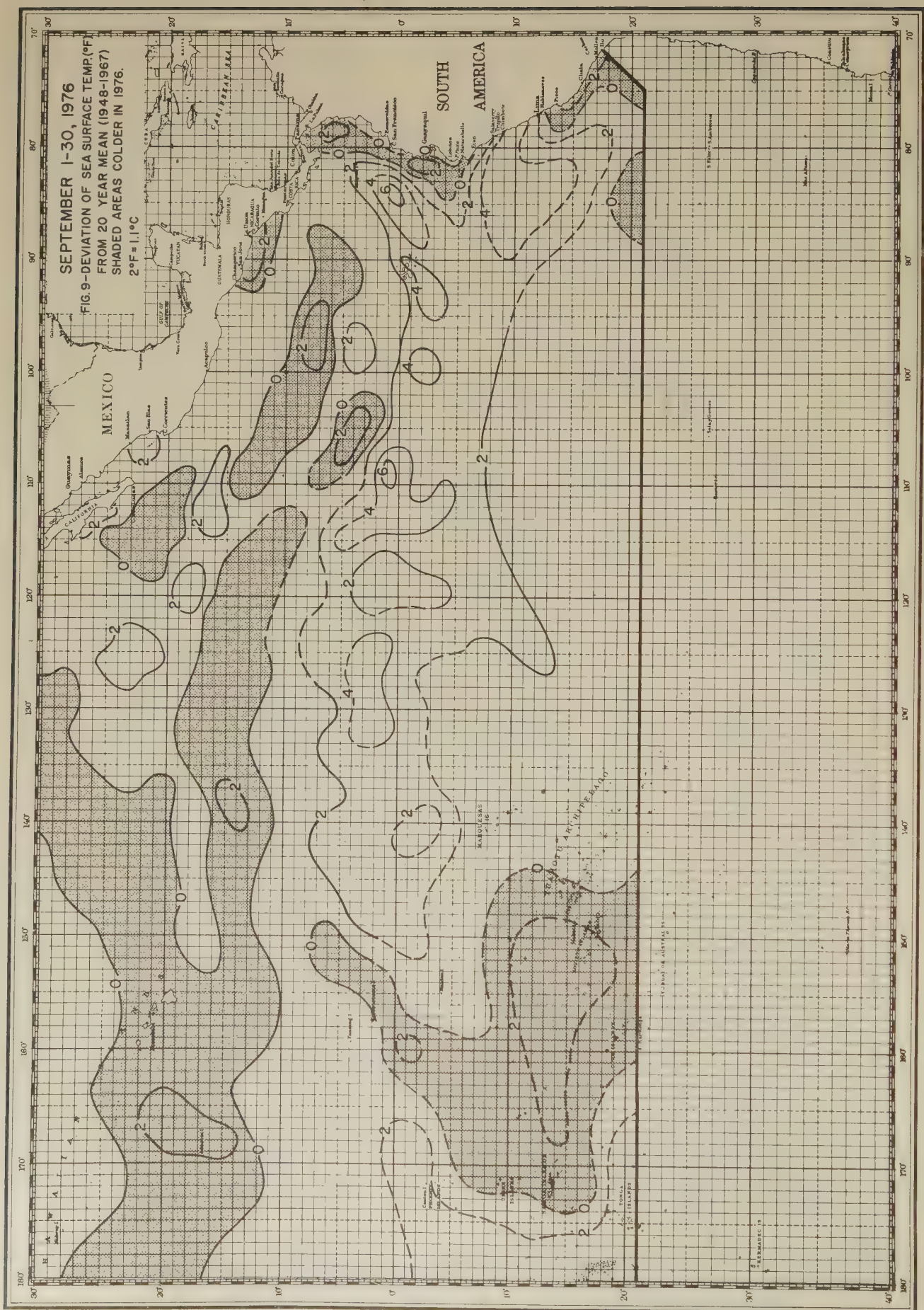
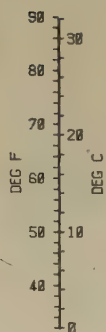
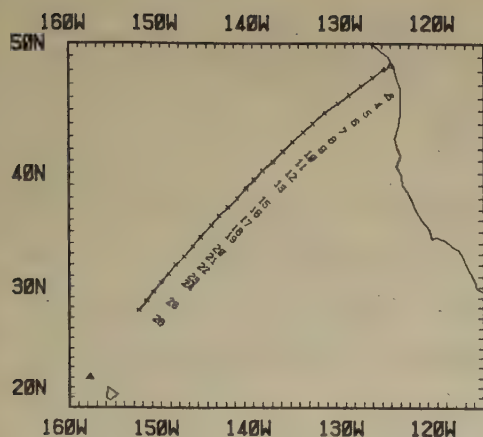


FIGURE 10



SHIP CALIFORNIAN

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CAPE FLATTERY, WASH.

- MAKAPUU PT., OAHU, HAWAII

05 SEP 1976 - 11 SEP 1976

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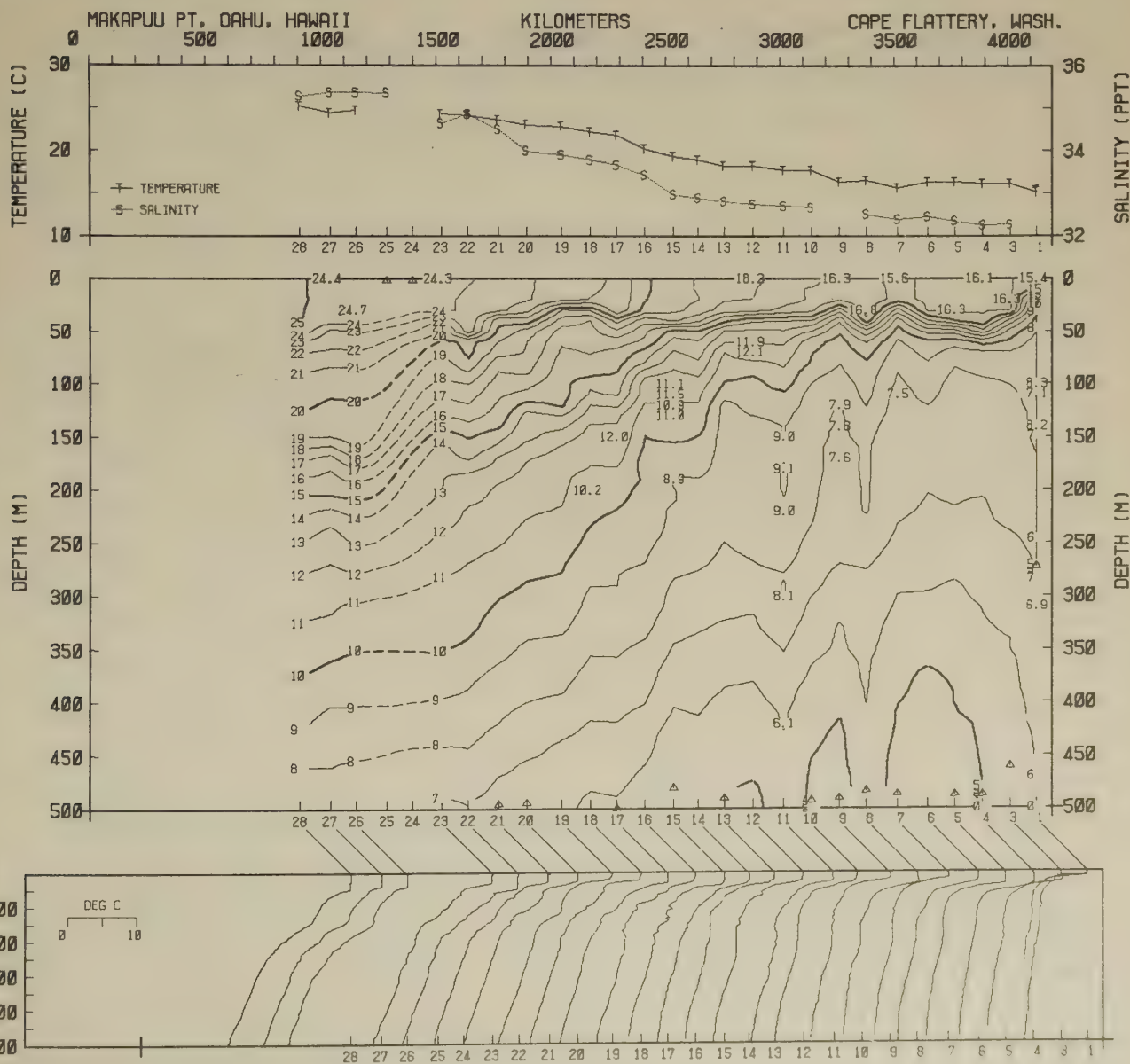
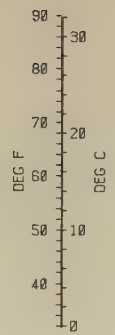
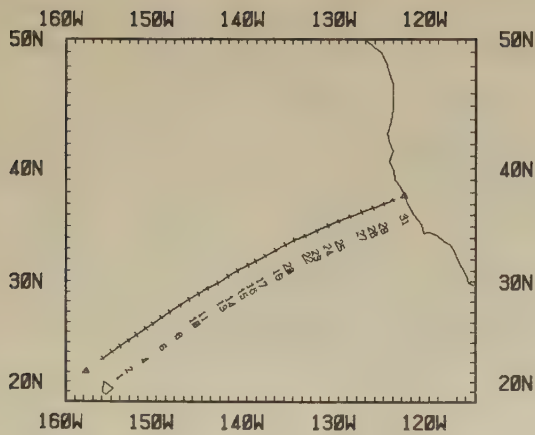


FIGURE 11



SHIP CALIFORNIAN

VOYAGE 275

MATSON

MAKAPUU PT., OAHU, HAWAII

- SAN FRANCISCO, CA.

17 SEP 1976 - 23 SEP 1976

NOAA-NMFS PEG MONTEREY, CA.

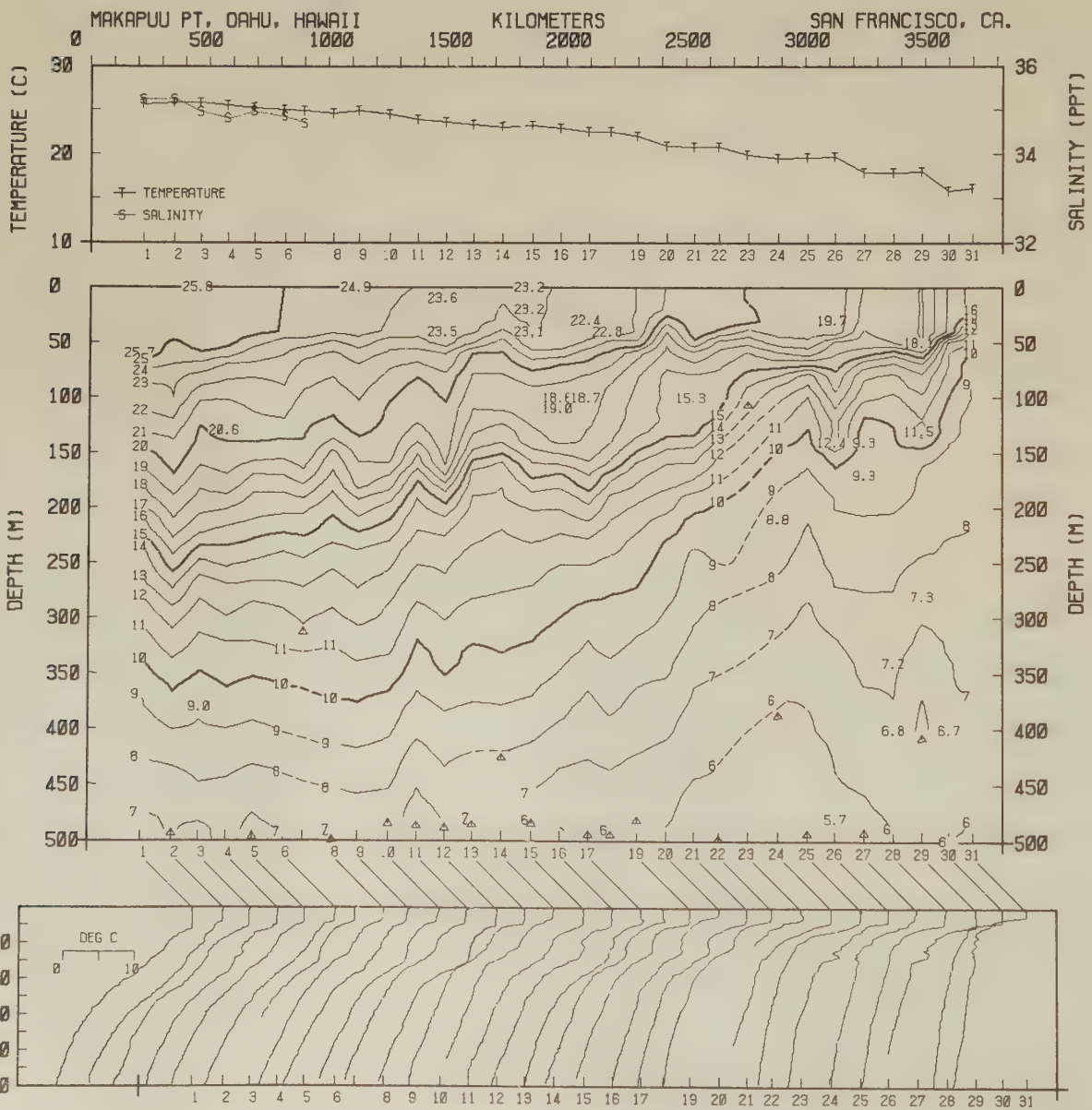
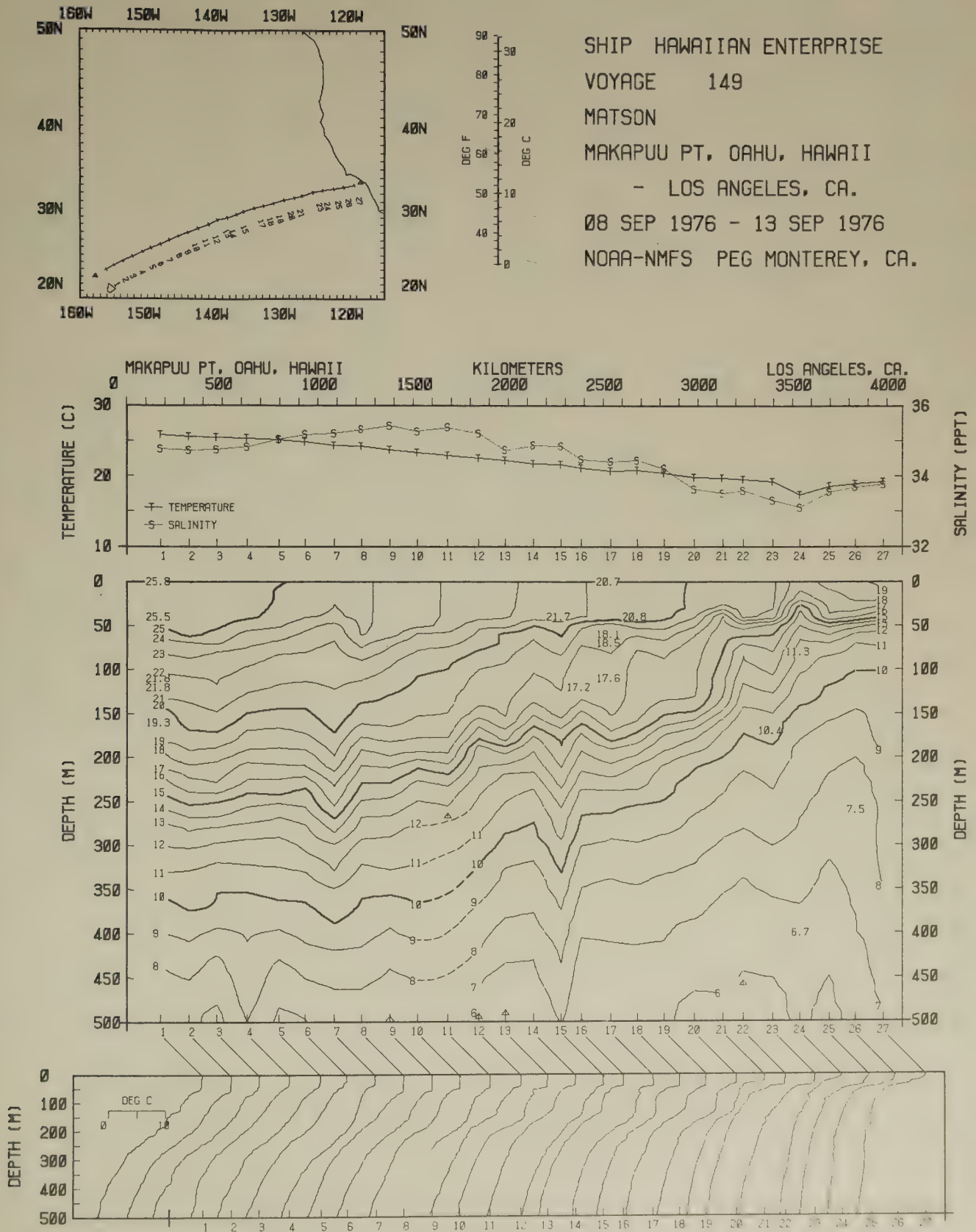


FIGURE 12



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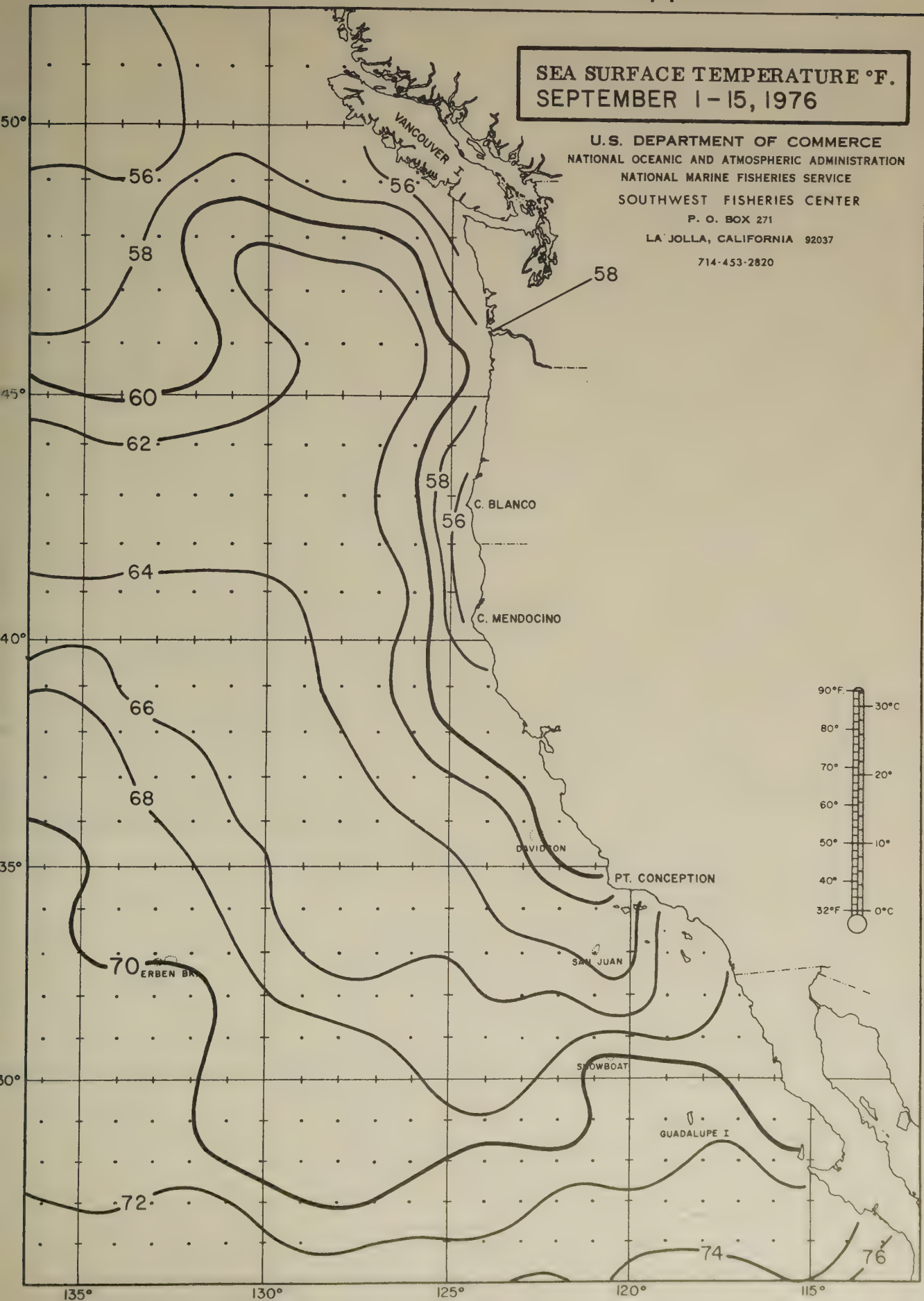
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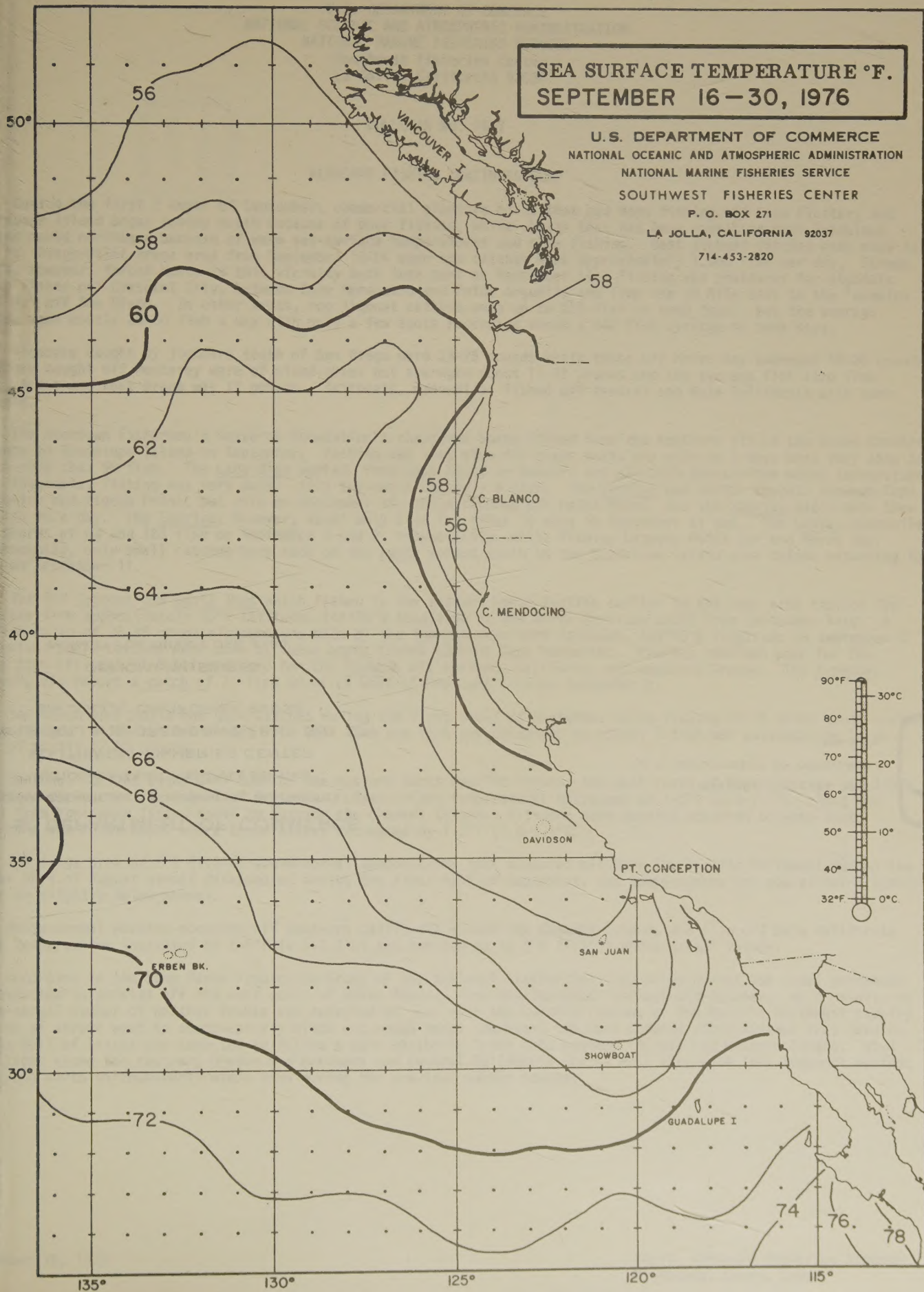
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SEA SURFACE TEMPERATURE
SEPTEMBER 15-30, 1979

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La Jolla, California 92038

BULLETIN No. 76-7

ALBACORE FISHING CONTINUES SLOW

During the first 2 weeks of September, commercial albacore boats that had been fishing off Cape Flattery and Vancouver Island began moving south because of poor fishing, while boats that had been operating near Guadalupe and moved northward because of warm sea-surface temperatures and slow fishing. Best jigboat catches were made in the Ft. Bragg-Point Arena area from September 10-14 when top catches were approximately 1,000 fish per day. Strong winds, however, forced boats in this vicinity back into port on September 14. Fishing was scattered for jigboats which fished off Crescent City, between Cape Mendocino and Point Arguello and from the 60 Mile Bank to the "dumping grounds" off San Diego. In other areas, top jigboat catches were up to 250 fish on some days, but the average catches were mostly 20-80 fish a day with only a few spots recording about a 100 fish average on some days.

Albacore caught by jigboats south of San Diego were 13-25 pounds while those off Morro Bay averaged 12-20 pounds. Albacore caught off Monterey were of mixed-sizes but averaged about 11-12 pounds and the average fish size from Point Arena and Fort Bragg was 12 pounds. Baitboats, meanwhile, fished off central and Baja California with some success.

The American Fishermen's Research Foundation's chartered boats fished from the southern tip of the Queen Charlotte Islands to Guadalupe Island in September. Fishing was very slow for these boats and only on 3 days were they able to catch more than 50 fish. The Lady Olga worked from Cape Scott to Newport and although sea-surface water temperatures were favorable, fishing was very poor. Its top catch was only 6 fish. The Sunrise had better success between Cape Mendocino and Pigeon Point; but only on September 14, while fishing off Point Arena, did the Sunrise catch more than 100 fish in a day. The Sunrise, however, spent only 6 of the first 15 days in September at sea. The Lusty, meanwhile, made scores of 63 and 183 fish on September 1 and 2, respectively, while fishing between Point Sur and Morro Bay. Subsequently, only small catches were made as the Lusty worked south to the Guadalupe Island area before returning to port on September 11.

The F/V Typhoon and Santa Ines which fished in the western North Pacific earlier in the year also trolled for albacore from approximately 40°N latitude, 144°30'W longitude to the North American coast from September 1-10. A top fish catch of 26-35 pound albacore was made by the Typhoon near 40°N latitude, 144°30'W longitude on September 1. Otherwise, small catches were made as these boats fished towards Cape Mendocino. Fishing remained poor for the Santa Ines off central California and for the Typhoon off northern California and southern Oregon. The Typhoon, however, did report a catch of 71 fish 60 miles west of Crescent City on September 8.

San Diego sportboats had good catches during the first weeks of September while fishing 60-75 miles south-southwest of San Diego. Daily catches ranged from less than one fish per passenger to nearly 5 fish per passenger on large boats of mostly 17-25 pounds.

Seasonal cooling began over much of the eastern North Pacific between the west coast of North America and 135°W longitude during the first half of September. Sea-surface temperatures decreased by 1-3°F (0.6-1.7°C) along the coast from Vancouver Island south to outside the Channel Islands, although some warming occurred between Cape Mendocino and Point Reyes where temperatures increased by 1-2°F (0.6-1.1°C).

The large area of 2°F (1.1°C) above-normal temperatures that appeared offshore the Pacific Northwest during the latter part of August almost disappeared during the first half of September, and temperatures are now either slightly above or slightly below normal.

Above-normal warming occurred off southern California around the Channel Islands and also off Baja California where temperatures increased by 2-6°F (1.1-3.3°C) and are now up to 2°F (1.1°C) above normal values.

According to the Long Range Prediction Group of the National Weather Service, below-normal sea level pressures are expected to persist off the west coast of North America from mid-September through mid-October. As a result, an above-normal number of weather fronts are expected to pass over the coastal regions of the Pacific Northwest causing periods of strong west to southwesterly winds and rough seas. However, the more intense storm systems that develop off the Gulf of Alaska are expected to follow a more northerly track into eastern Alaska and western Canada. Wind conditions along the southern Oregon and northern and central California coasts will vary with less frequent periods of strong north-northwesterly winds than during the previous summer months.

OFFICE OF THE DIRECTOR

MEMORANDUM FOR THE DIRECTOR

On the 1st of March 1964, the Director of the Maritime Service Division, Bureau of Maritime Service, U.S. Department of Commerce, advised that the following information was received from the Maritime Service Division, Bureau of Maritime Service, U.S. Department of Commerce, on the 1st of March 1964:

The Maritime Service Division, Bureau of Maritime Service, U.S. Department of Commerce, advised that the following information was received from the Maritime Service Division, Bureau of Maritime Service, U.S. Department of Commerce, on the 1st of March 1964:

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